The invention claimed is:

1. An optical subassembly comprising:

a ferrule having a capillary extending axially through said ferrule, said capillary satisfying a predetermined tolerance for the dimensions of said capillary; and

at least four optical fibers positioned inside of said capillary, said optical fibers satisfying predetermined tolerances for core concentricity and the outer dimension of the cladding.

2. The optical subassembly of claim 1, wherein the tolerance of said capillary is less than about +/- 2.0 μm.

3. The optical subassembly of claim 1, wherein the tolerance of said capillary is less than about +/- 1.0 μm.

4. The optical subassembly of claim 1, wherein the tolerance of said capillary is less than about +/- 0.5 μm.

5. The optical subassembly of claim 2, wherein the cross section of the capillary is substantially a parallelogram and each side of said capillary is about (2*D)+2.0 μm where D is the diameter of said optical fibers.

6. The optical subassembly of claim 3, wherein the cross section of the capillary is substantially a parallelogram and each side of said capillary is about (2*D)+1.0 μm where D is the diameter of said optical fibers.

7. The optical subassembly of claim 4, wherein the cross section of the capillary is substantially a parallelogram and each side of said capillary is about (2*D)+0.5 μm where D is the diameter of said optical fibers.

8. The optical subassembly of claim 2, wherein the cross section of the capillary is substantially a rectangle and a first and a second sides of said capillary are each about (2*D)+2.0 μm where D is the diameter of said optical fibers.

9. The optical subassembly of claim 3, wherein the cross section of the capillary is substantially a rectangle and a first and a second sides of said capillary are each about (2*D)+1.0 μm where D is the diameter of said optical fibers.

10. The optical subassembly of claim 4, wherein the cross section of the capillary is substantially a rectangle and a first and a second sides of said capillary are each about (2*D)+0.5 μm where D is the diameter of said optical fibers.

11. The optical subassembly of claim 8, wherein a third and a fourth sides are each about (2*D)+Δ+2.0 μm where D is the diameter of said optical fibers, and Δ is the minimum distance between the surfaces of adjacent fibers.

12. The optical subassembly of claim 9, wherein a third and a fourth sides are each about (2*D)+Δ+1.0 μm where D is the diameter of said optical fibers, and Δ is the minimum distance between the surfaces of adjacent fibers.

13. The optical subassembly of claim 10, wherein a third and a fourth sides are each about (2*D)+Δ+0.5 μm where D is the diameter of said optical fibers, and Δ is the minimum distance between the surfaces of adjacent fibers.

14. The optical subassembly of claim 8, wherein a third and a fourth sides are each about (3*D)+2.0 μm where D is the diameter of said optical fibers.

15. The optical subassembly of claim 9, wherein a third and a fourth sides are each about (3*D)+1.0 μm where D is the diameter of said optical fibers.

16. The optical subassembly of claim 10, wherein a third and a fourth sides are each about (3*D)+0.5 μm where D is the diameter of said optical fibers.

17. The optical subassembly of claim 1, wherein the tolerance for said core concentricity is 1.0 μm, the tolerance for the diameter of said fibers is 1.0 μm, and the tolerance for ovality of said fibers is 0.8 percent.

18. The optical subassembly of claim 1, wherein the tolerance for said core concentricity is 0.5 μm, the tolerance for diameter of said fibers is 0.5 μm, and the tolerance for ovality of said fibers is 0.4 percent.

19. The optical subassembly of claim 1, wherein the tolerance for said core concentricity is 0.1 μm, the tolerance for diameter of said fibers is 0.1 μm, and the tolerance for ovality of said fibers is 0.12 percent.

20. The optical subassembly of claim 1, wherein said ferrule is formed from two wafers and said capillary is formed from two matching grooves in said two wafers.

21. The optical subassembly of claim 20, wherein each of said wafers further comprise at least one alignment groove which form an alignment capillary when the wafers are aligned.

22. The optical subassembly of claim 21, wherein said ferrule further comprises at least one alignment rod positioned in said alignment capillary.

23. The optical subassembly of claim 22, wherein the tolerance for the diameter of the alignment rod is 2.0 μm.

24. The optical subassembly of claim 22, wherein the tolerance for the diameter of the alignment rod is 1.0 μm.

25. The optical subassembly of claim 22, wherein the tolerance for the diameter of the alignment rod is 0.5 μm.

26. A fiber optic subassembly comprising:

a ferrule having at least two fiber capillaries extending axially through said ferrule, said capillaries satisfying predetermined tolerances for the dimensions of said capillaries; and

at least four optical fibers positioned inside said capillaries, said optical fibers satisfying predetermined tolerances for core concentricity and the outer dimension of the cladding of said fibers.

27. The fiber optic subassembly of claim 26, wherein the tolerance of said capillaries is less than about +/- 2.0 μm.

28. The fiber optic subassembly of claim 26, wherein the tolerance of said capillaries is less than about +/- 1.0 μm.

29. The fiber optic subassembly of claim 26, wherein the tolerance of said capillaries is less than about +/- 0.5 μm.

30. The fiber optic subassembly of claim 27, wherein the cross section of at least one of the capillaries is substantially a rectangle and two sides of said at least one capillaries are each about (2*D)+Δ+2.0 μm where D is the diameter of said optical fibers and Δ is the minimum distance between the cladding of adjacent fibers.

31. The fiber optic subassembly of claim 28, wherein the cross section of at least one of the capillaries is substantially a rectangle and two sides of said at least one capillaries are each about (2*D)+Δ+1.0 μm where D is the diameter of said optical fibers and Δ is the minimum distance between the cladding of adjacent fibers.

32. The fiber optic subassembly of claim 29, wherein the cross section of at least one of the capillaries is substantially a rectangle and two sides of said at least one capillaries are each about (2*D)+Δ+0.5 μm where D is the diameter of said optical fibers and Δ is the minimum distance between the cladding of adjacent fibers.

33. The fiber optic subassembly of claim 27, wherein the capillaries cross-section are substantially oval.

34. The fiber optic subassembly of claim 26, wherein the tolerance for said core concentricity is less than about 1.0 μm, the tolerance for the diameter of said fibers is less than about 1.0 μm, and the tolerance for ovality of said fibers is less than about 0.8 percent.

35. The fiber optic subassembly of claim 26, wherein the tolerance for said core concentricity is less than about 0.5 μm, the tolerance for diameter of said fibers is less than about 0.5 μm, and the tolerance for ovality of said fibers is less than about 0.4 percent.

36. The fiber optic subassembly of claim 26, wherein the tolerance for said core concentricity is less than about 0.1 μm, the tolerance for diameter of said fibers is less than about 0.1 μm, and the tolerance for ovality of said fibers is less than about 0.12 percent.

37. The fiber optic subassembly of claim 26, wherein said capillaries are formed from two wafers, each of said wafers comprising matching grooves which form the capillaries when the wafers are aligned.

38 The fiber optic subassembly of claim 37, wherein said wafers further comprise matching alignment grooves.

39. The fiber optic subassembly of claim 38, further comprising alignment rods positioned in said alignment grooves.

40. An optical fiber ferrule comprising:

a pair of silicon wafers, each of said wafers comprising;

at least one fiber groove positioned such that said fiber grooves match with the fiber grooves on the other wafer to support optical fibers,

at least one alignment groove, wherein the position of each of said at least one alignment grooves match the position of alignment grooves on the other wafer such that the alignment grooves act together to support at least one alignment rod.

41. The optical fiber ferrule of claim 40, further comprising at least one alignment rod positioned in said alignment grooves.

42. An optical device selected from at least 10 optical devices which are identical except for differences due to manufacturing tolerances, each of said optical devices including optical fiber ferrules made of optical fibers, said fibers comprising the following characteristics:

a core concentricity tolerance of 1.0 μm,

a diameter tolerance of 1.0 μm, and

an ovality tolerance of 0.8 percent.

43. The optical device of claim 42, wherein the fibers comprise the following characteristics:

a core concentricity tolerance of 0.5 μm,

a diameter tolerance of 0.5 μm, and

an ovality tolerance of 0.4 percent.

44. The optical device of claim 43, wherein the fibers comprise the following characteristics:

a core concentricity tolerance of 0.1 μm,

a diameter tolerance of 0.1 μm, and
an ovality tolerance of 0.12 percent.

45. A fiber ferrule for use in multiple-port optical devices, wherein said ferrule comprises a cylindrical glass rod comprising at least one capillary, and wherein the capillary configuration is selected from the group consisting of a rounded square, a rounded rectangle, a dual-oval, a four-circular capillary, a two-wafer type formed from two wafers comprising matching grooves which form capillaries when the wafers are aligned, and a capillary using at least one alignment washer.

46. The fiber ferrule of claim 45, wherein said at least one capillary surrounds at least two pair of optical fibers, each of said pairs of fibers defining a separation distance, and said capillary supports said fibers such that the separation distances for each pair of fibers is equal within a tolerance of about 0.5 μm.

47. The fiber ferrule of claim 45, wherein the tolerance for the dimensions of said capillary are 2.0 μm.

48. The fiber ferrule of claim 47, wherein the tolerance for the dimensions of said capillary are 1.0 μm.

49. The fiber ferrule of claim 48, wherein the tolerance for the dimensions of said capillary are 0.5 μm.